NASA Procedural Requirements

COMPLIANCE IS MANDATORY

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Subject: NASA Program and Project Management Processes and Requirements

Responsible Office: Office of the Chief Engineer

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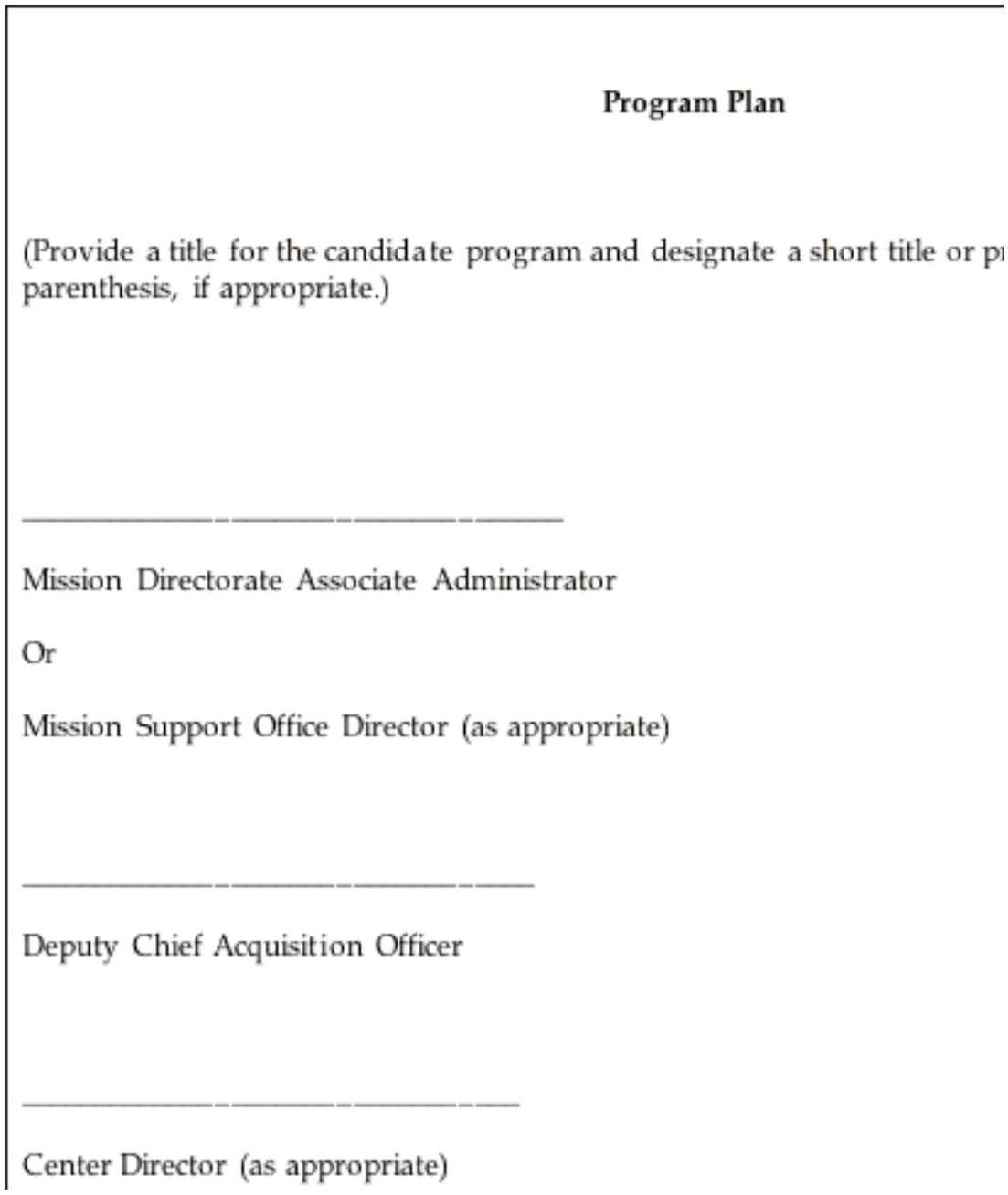
APPENDIX C. Program Plan Template

C.1 Title Page


Program Plan

(Provide a title for the candidate program and designate a short title or pı
parenthesis, if appropriate.)

_____

Mission Directorate Associate Administrator

Or

Mission Support Office Director (as appropriate)

_____

Deputy Chief Acquisition Officer

_____

Center Director (as appropriate)

Figure C-1 Program Plan Title Page

C.2 Template

PROGRAM PLAN
(PROGRAM TITLE)

1.0 Part I: Program Overview

1.1 Introduction

Briefly state the background of the program and its current status, including the results of formulation activities, decisions, and documentation.

1.2 Program Goals, Objectives And Metrics

State program goals and specific objectives with clear traceability to the Agency Vision, Mission, and strategic goals. Performance goals, and performance indicators, and their relationship to NASA program goals and objectives set forth in NPD 1000.1, NASA Strategic Plan, should be expressed in an objective, quantifiable, and measurable form.

Goals and objectives should include commitment to safety and mission success.

1.3 Customer And Stakeholder Definition And Advocacy

State the main customers and stakeholders of the program (e.g., PI, science community, technology community, public, education community, Mission Directorate, Mission Support Office, OCE, OSMA, CIO, NASA Centers) and the process to be used to ensure customer and stakeholder advocacy.

1.4 Program Authority And Management Structure

Identify the location (Center or Headquarters) where the Program Manager resides and each Center's responsibilities, the Governing Program Management Committee or Council(s) for oversight of the projects within the program, and the approving official for projects.

Briefly describe the architecture of the program, its major components, and the way they will be integrated. Describe how the major components are intended to operate together, and with legacy systems. Describe the way the program will relate to other institutions within NASA as well as outside of NASA. Identify the responsibilities of each NASA Center as they relate to their respective requirement allocations referenced in PROGRAM REQUIREMENTS below. Describe the process by which projects are formulated, approved or terminated.

a. Organization. Describe the NASA organizational structure for managing the program and projects from the Mission Directorate or Mission Support Office to the NASA Center Project Managers. Include lines of authority and reporting; illustrate the organization graphically.

b. Responsibilities. Define management responsibilities of the Mission Directorate or Mission Support Office, the Program Manager, and Project Manager, including the authority of these persons as described in NPD 7120.4, Program/Project Management. Indicate their responsibilities for developing, concurring, and approving principal program documents, such as the formulation authorization, the Program Plan, Project Plan, RFPs and other contract-related documents, reports associated with major reviews, and other key activities.

2.0 Part Ii: Program Baseline

2.1 Program Requirements

Document the program requirements, including performance and safety requirements, and technical success criteria, in an objective, quantifiable and measurable form. For multiple projects within a program, describe the way in which the program requirements will be allocated to the respective projects. The approving authority is required to document objectives and high-level requirements and how these requirements flow down from the program requirements for each project as they are formulated. Traceability of requirements and flow-down from/to projects should be demonstrated. If the mission characteristics indicate a greater emphasis is necessary on maintaining either technical, cost, or schedule, then this section should also identify which is more important to be considered, (e.g., it should address if the mission is cost capped, or if schedule is paramount, as for a planetary mission, or if it is critical to accomplish all of the technical objectives.) Programmatic success criteria such as Key Performance Parameters (KPPs), outcomes, and other accompanying performance indicators should be expressed in objective, quantifiable, and measurable form. Include project KPP thresholds and KPP goals, where applicable.

2.2 Program Schedule

Provide a schedule of program activities and events covering the life of the program; include all applicable events, such as approval dates for major program and project documents, instrument selection dates, dates of major project reviews, launch dates (or equivalent system "delivery" dates), and other Deputy Administrator, Mission Directorate, or Mission Support Office decisions. Include all PCA milestones. Include the strategy for addressing schedule updates when impacts to the schedule occur.

2.3 Program Resources

All elements in full cost are to be included for each participating NASA Center, identify yearly New Obligational Authority (NOA) full cost estimates for system development and operations, facility construction, institutional support (including safety and mission assurance), and management. Address Civil Service workforce levels. Once program approval has been completed, this section will be a reference for reconciliation to IBPD and IFM data.

3.0 Part Iii: Subplans

3.1 Controls And Compliance

Describe the process by which the program assures compliance with NASA policies, directives, as well as other applicable requirements. Describe the process by which project requirements are validated for compliance with the program requirements. Describe the process for controlling changes. Describe the process for updating the PCA as a result of any changes. Indicate key program parameters (cost, schedule, and technical) which will require Deputy Administrator, Mission Directorate, Mission Support Office, or Program Manager approval for change. Identify the reserves management strategy and approval authority to include identification of an Allowance for Program Adjustment (APA). Describe the strategy for supporting and/or implementing independent assessments.

3.2 Relationships To Other Programs And Agreements

3.2.1 Internal: Describe the way the program will relate to other institutions within NASA (e.g., crosscutting technology efforts, space communications and launch services). List the internal agreements necessary for program success and projected dates of approval. This list should include those agreements that are concluded with the authority of the Program Manager, and reference those agreements concluded with the authority of the Mission Directorate or Mission Support Offices.

3.2.2 External: Describe the way the program will relate to entities outside of NASA (e.g., interagency or international). List the external agreements necessary for program success and projected dates of approval. This list should include those agreements that are concluded with the authority of the Program Manager, and reference those agreements concluded with the authority of the Mission Directorate, Mission Support Office, and/or Deputy Administrator.

3.3 Budget And Acquisition Strategy

Briefly describe the budget and acquisition approach to be applied at the program level toward each project. The respective roles, responsibilities, and relationships between the Government and its contractors, vendors, and/or partners are addressed, including a description of integration and surveillance responsibilities. The use of cost caps or other cost control strategies should be addressed as well as the strategy for initiation of new program elements.

3.4 Technology Strategy

Identify the NASA crosscutting or other technology thrusts to be utilized by the projects. Identify those technologies the program expects to mature during the life of the program. Briefly describe how the technologies will be developed and infused. Describe how and when the program will evaluate the feasibility, readiness, cost, risk, and benefits of the new technologies. Also provide alternative development strategies for technologies that do not mature as expected.

3.5 Cooperation And Commercialization

Identify opportunities for establishing partnerships with private industry, academia, or other governmental organizations to conduct dual use research, develop mutually beneficial technologies, and transfer results into NASA for mission use and the private sector for commercial application.

3.6 Data Management And Distribution

Program data management planning is provided as either a section of this Program Plan or as a separate document. Address the data being captured by all projects within the program and its availability. It contains plans for data rights and services addressing issues which are community-wide and often require tradeoffs between project and Center interests and various communities.

3.7 Safety And Mission Assurance

Safety and mission assurance planning is provided either as a section of this Program Plan or as a separate document. Address the activities and steps to be taken to ensure safety of the public, the NASA astronauts and pilots, the NASA workforce, and NASA's high value equipment and property. Address both hardware and software aspects of the program, and identify all activities such as safety, reliability and maintainability, quality assurance, software assurance (including IV&V), environmental related design and test including orbital debris mitigation, program surveillance, failure detection, isolation, and recovery, and failure reporting/resolution, and hazard analysis and mitigation, which are used to ensure the success and safety of the mission.

3.8 Risk Management Strategy

Summarize the risk management approach to be used for the program, including appropriate actions to mitigate risk

and program de-scope plans. Also identify primary risks. A stand-alone Risk Management Plan will also be developed that includes the content shown in NPG 8000.4, Risk Management Procedures and Guidelines.

3.9 Environmental Impact

Identify the documentation and schedule of events associated with environmental compliance considerations (NEPA and other requirements). This may include an Environmental Assessment and/or an Environmental Impact Statement.

3.10 Institutional And Logistics

Describe the institutional facilities and equipment that currently exist, or

must be completed to successfully meet program goals and objectives. This section should outline methods for meeting the logistics and re-supply aspects (if applicable) of the program.

3.11 Physical And Information Technology Security

Describe the approach to ensuring that the team members, hardware and software are secure from intentional and/or unintentional breaches do not occur.

3.12 Verification And Validation

Describe the program's approach to verification and validation for the assurance of program success. Address requirements for hardware and software verification and validation as well as software independent verification and validation.

3.13 Reviews

List the reviews that the program will conduct, including independent assessments, in response to MDAA (or MSOD) and GPMC requirements. Include the timeline for these reviews.

3.14 Education And Public Outreach Plan

Describe planned efforts and activities to improve science literacy by engaging the public in understanding the project, its objectives, and benefits. Summarize plans to stimulate interest in science, engineering, and technology through mission-related outreach activities.

3.15 Termination Review Criteria

Provide the technical, scientific, schedule, cost, and other criteria, which will be utilized to consider whether a termination review for the program should be conducted.

3.16 Deviations And Waivers

Identify known deviations and waivers that the program will obtain against NASA policies, directives or other applicable external requirements. Provide rationale and risk impact for the waiver or deviation, include characteristics such as scope, complexity, visibility, cost, and safety. This list should include the variances requiring Independent Technical Authority approval.

3.17 Change Log

Document changes to the Program Plan.

3.18 Appendices

NPR 7120.5 Compliance Matrix

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